

## **A new species of freshwater mussel (Bivalvia: Unionidae), *Pleurobema athearni*, from the Coosa River Drainage of Alabama, USA**

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### **Abstract**

The Mobile Basin historically supported one of the most diverse freshwater mussel (Bivalvia: Unionidae) assemblages in North America. More than 65 species of mussels are known from the Basin, but it is difficult to determine how many species were present historically. The drainage's unique physical habitat was largely destroyed between the late 1800s and mid-1900s by impoundment and channel modifications of most of the larger rivers. Many species that were once common are now restricted to small headwater rivers and mid-sized tributaries. Recent Coosa River tributary surveys revealed a new, undescribed species of *Pleurobema*. This new species, *Pleurobema athearni*, is distinctive in outward appearance, shell morphometry and reproductive morphology, and can be distinguished from other Coosa River drainage unionids. Our analysis indicates that *P. athearni* is morphologically different from other similar taxa. It differs both in shell width/length and width/height ratios and thus provides a simple, quantitative means to differentiate this species from *P. georgianum* (Lea, 1841) *Fusconaia barnesiana* (Lea, 1838), and *F. cerina* (Conrad, 1838), which it superficially resembles and that also occur in the area. Our morphological diagnosis of this species is supported by recent molecular analyses that suggest this species is a *Pleurobema* and one closely related to other endemic Coosa River drainage unionids. The discovery of a new species of large, long-lived macroinvertebrate from a relatively well-sampled drainage in a populated region of the southeast United States underscores the need for more detailed surveys in isolated stretches of tributary streams. It should also serve as a reminder that almost 40 species of aquatic mollusks have been extirpated from the Mobile Basin before anything could be learned about their habitat or life history requirements.

**Key words:** Big Canoe Creek, freshwater mussel, Mobile Basin, mollusk biodiversity, Unionoida, endemic species